PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference U30068PCT	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP 03/14633	International filing date *(day/month/year)* 19.12.2003	Priority date *(day/month/year)* 27.12.2002
International Patent Classification (IPC) or both national classification and IPC A61K38/20		
Applicant UNIVERSITÄTSKLINIKUM MÜNSTER		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
27.05.2004	17.01.2005
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Merckling-Ruiz, V Telephone No. +49 89 2399-8590

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP 03/14633

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

1-10	as originally filed

Claims, Numbers

17	as originally filed
1-16	received on 28.12.2004 with letter of 28.12.2004

Drawings, Sheets

1-5	as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-16
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-16
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-16
	No:	Claims	

2. Citations and explanations

   see separate sheet

1. Reference is made to the following documents :

   D1 : Kishida et al. (2001)
   D2 : Nagai et al. (Sept. 2002)

Regarding point V

2. Present claim 1 is directed to a second medical use of IL-18 for treating disorders of the skin associated with UV-radiation, said disorder being selected from sunburn, inflammation and skin ageing.
   D1 and D2 both disclose the use of IL-18 in gene therapy for treating melanoma. Melanoma is not within the scope of claim 1. None of the other available prior art documents discloses the medical use of IL-18 for treating the disorders recited in present claim 1. Claims 1-16 are new.

3. Neither D1 nor D2 suggest the use of IL-18 for treating disorders other than tumors (especially melanoma).
   D3, regarded as the closest prior art, discloses the relationship between UV-B irradiation and Il-18 production in keratinocytes. However, no medical use of Il-18 is suggested and the teaching of the experiments carried out in D3 do not enable the skilled person to extrapolate a medical use of IL-18. Claims 1-16 involve an inventive step.

Miscellaneaous

4. The application is not clear for the following reasons :

4.1 Claims 1-3 are directed to a second medical use but also encompass "skin aging". Skin aging is not regarded as a disease and should not be claimed in a second medical use format.

4.2 Claims 2 and 4 do not contain any acceptable technical feature that further defines the invention. Definitions reciting mechanisms of action are not limiting the scope of

a claim in any manner.
In addition, the "technical feature" defined in claim 9 appears to be obscure, superfluous and relating to a method of treatment falling under Art. 52(4) EPC.

4.3 The scope of claims 11 and 17 is ambiguous because the expression "preferably" does not introduce any limiting technical feature.

U30068PCT
Universitätsklinikum Münster

New Claims

1. Use of interleukin-18 for the manufacture of a medicament for the prevention, reduction and treatment of disorders of the skin associated with damage induced by UV-radiation, wherein the disorder is selected from the group comprising sunburn, inflammation and skin aging.

2. Use according to claim 1, wherein the disorder is a disorder that can be alleviated and/or prevented by induction of the nucleotide excision repair (NER) pathway.

3. Use according to any of the foregoing claims, wherein the disorder is associated with apoptosis.

4. Use according to any of the foregoing claims, wherein the UV-radiation covers at least a range of wavelengths from 220 nm to 350 nm.

5. Use according to any of the foregoing claims, wherein the UV-radiation covers at least a range of wavelengths from 250 nm to 330 nm.

6. Use according to any of the foregoing claims, wherein the UV-radiation covers at least a range of wavelengths from 290 nm to 320 nm.

7. Use according to any of claims 4-6, wherein the UV-radiation originates from natural and/or artificial sunlight.

8. Use according to any of the foregoing claims comprising an application of said medicament to a patient in need thereof.

9. Use according to claim 8, wherein the application is systemic and/or topical.

10. Use according to any of claims 8 – 9, wherein the application occurs by way of application of a pharmaceutically acceptable carrier and/or by injection, preferably intracutaneous injection of a pharmaceutically acceptable carrier.

11. Use according to claim 10, wherein the carrier is selected from the group comprising liposomes, ointments, oils, cremes, emulsions and dispersions.

12. Use according to any of claims 9 – 11, wherein the topical application occurs in a dose range of from 1 ng/ml to 1000 ng/ml.

13. Use according to any of claims 9-11, wherein the systemic application occurs in a dose range of from 0.1 µg/kg bodyweight to 100 µg/kg bodyweight.

14. Use according to claim 13, wherein the application occurs once to eight times daily.

15. Use according to any of claims 8 – 14, wherein the application occurs before, during and/or after a patient is exposed to UV-radiation.

16. Use according to any of claims 8 – 15, wherein the patient in need is a mammal, preferably a human being.